

Work Order ID 73959

Tuesday, September 20, 2011 10:18:19 AM



Page 1

Item ID: D117-762-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 9/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 10/4/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: MF

Date: 11-09-20

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3492

C

D3582

Rev A

100



0.00

DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D117-762-041 CHG001

N/A

120



0.00

CNC Bend 1

BENDING MACHINE - SKIDTUBES

Memo

0.00

CNC Delta 100 Bender

Bend tube as per program D3582 on CNC Bender and Dwg D3582. Folio 3,
use bending aid DT9632
2- cut fwd end of tube as per dwg

> DP

11-12-7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
				11-15			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Run Start

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Date:

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Date:

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Sequence ID/
Work Center IDOperation
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Run Hours

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QtyReject
QtyReject
NumberInsp.
Stamp

130



Skidtubes

Skidtubes

Skidtubes

Memo

1-Cut Aft end using DT8185 ✓

2-Deburr ends ✓

3-Drill Aft Cap holes using DT8678 *** OPEN AFT CAP HOLE TO .187" *** ✓

4-Locate DT 8973 from aft cap holes & Drill Ground wire hole on top of Tube.

5-Install 3/16 cleco in Ground wire hole, then drill all X-Bolt holes using 3/16" drill.

6-Drill pilot holes for wearplates using DT8900

7-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582. ✓

8- open ground wear holes to 0.391" as per section B-B ✓

9-Open Aft Cap holes using .209" drill.

10-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65 and 5.906 measurements are respected. Double check before drilling, do not open holes to finish size.

SAD 11-12-08

W/O:		WORK ORDER CHANGES					
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Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140



Skidtubes

Skidtubes

0.00

Memo

0.00

Skidtubes

1-Weld fwd cap D2964 per dwg D3582 and QSI 004

A/R AL ROD

Batch:

M118735/M117889 BE 11-12-08

2-Grind flush

BE 11-12-09

150



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

8/11/2/09

160



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8/11/2/09

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Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

75 11-12-11

180

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 0 BE 11-12-19

W/O:		WORK ORDER CHANGES					
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Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Open X-Bolt holes to finish size as per Dwg D3582, all sections

2-Counter Sink X-BOLT holes as per Dwg D3582

3-Deburr and blow out chips from inside of tube, prep. tube for welding.

4-Bond web as per Dwg D3582 & QSI 015

A/R 241 Sike Flex Batch: 119208

Exp Date: 12-08-03

5-Weld x-bolt spacers(D2973) as per Dwg D3582 section B-B.

A/R AL ROD Batch: M117889

6-Grind welds flush



12-1-2

11-12-19

BE 11-12-23

200

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

S1210103

Quality Control

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Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8 12/01/03

215

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Touch-up alodine as per QSI

IX Ø M-L 12/01/03

220

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME

OVEN TEMPERATURE:

FINISH TIME:

8-30
3200 F
9-00

IX Ø M-L 12/01/04

M11A480

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start



QC: Date: SPC (Y/N): Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

230

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 BL 12-1-5.

250

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

1 BL 12-1-5

2-Install Aft cap as per Dwg D3582, Detail "C"

A/R 241 Sika Flex Batch: 119508.

Exp Date: 12-8

3-Install Wearplates as per Dwg D3582,

Note: Install Bolt and washer on Ground Wire inserts on top of tube see section D-D of dwg D3582

*****Do not install bolts where indicated on Dwg(Note #6)*****

A/R 241 Sika Flex Batch: 119508

Exp Date: 12-8

4-assemble o'ring as per dwg D3493 and apply o'ring lube

A/R 55-o'ring lube batch: 110848.

5- Wing Walk as per Dwg D3582 and QSI 005 4.4 119094.

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

12 - 01 - 06 ①

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D117-762-041

Location: _____

PPP Rev: _____

PPP 78418419

12/01/9

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

12/1/10

ME
12-01-10

W/O:		WORK ORDER CHANGES					
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Picklist Print

Tuesday, September 20, 2011 10:18:16 AM

Page 1

Work Order ID: 73959

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 9/20/2011



Required Date: 10/4/2011

Start Qty: 1.00

Required Qty: 1.00



Comments: IPP Rev:A 07.06.11 New Issue EC
IPP Rev:B 08-02-22 change to revA as per dwg DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3492-11		Manufactured	No			250	Each	14.0000	2	2			
													
Plug													



Location	Loc Qty	Loc Code
----------	---------	----------

FP	14	
71863 ✓	14	

D3492-13		Manufactured	No			250	Each	23.0000	6	6			
													
Plug													

Location	Loc Qty	Loc Code
----------	---------	----------

FP	20	
71848 ✓	20	
FP-B	3	
46693	3	

D3492-9		Manufactured	No			250	Each	21.0000	2	2			
													
Plug													

Location	Loc Qty	Loc Code
----------	---------	----------

FP-A	21	
46694 ✓	21	
	Each	
	57.0000	

D2962-150		Manufactured	No										
													
3.540 Outer Tube, Extrud													

Location	Loc Qty	Loc Code
----------	---------	----------

HALL	57	
59934	57	

W/O:		WORK ORDER CHANGES					
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Required Date: 10/4/2011

Start Qty: 1.00

Required Qty: 1.00

D2964
Cap. Manufactured No 140 Each 5.0000 1 1
BE11-12-08

Location Loc Qty Loc Code

LG002 5
64654 5

D2971
Cross Bolt Spacer Manufactured No 190 Each 0.0000 1 1
B 74720 71 BE11-12-23

D3584-1
Web Manufactured No 190 Each 0.0000 1 1
75189

D2973
Cross Bolt Spacer Manufactured No 190 Each 90.0000 2 2
BE11-12-23

Location Loc Qty Loc Code

LG002 90
14636 90

D3662-3
Crossbolt Spacer Manufactured No 190 Each 3.0000 1 1
BE11-12-23

Location Loc Qty Loc Code

LG001 3
44456 3

W/O:		WORK ORDER CHANGES					
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Start Date: 9/20/2011

Required Date: 10/4/2011

Start Qty: 1.00

Required Qty: 1.00

D3662-1 Manufactured No

190

Each

31.0000

3

3



Crossbolt Spacer



BE 11-2-23

Location

Loc Qty

Loc Code

LG

31

71799

1

71857

30

Each

502.0000

36

ALS4-1032-130

Purchased

No



Insert



BL 12-1-5

Location

Loc Qty

Loc Code

ST281

370

118386

370

ST282

132

117717

46

118237

48

118312

38

Each

493.0000

2

ALS4-428-165

Purchased

No



Inserts



BL 12-1-5

Location

Loc Qty

Loc Code

FP

475

117769 ✓

475

FP-B

18

114172

18

250

Each

43.0000

1

1

D2965

Manufactured

No



Cap, 105 Skidtube



BL 12-1-5

Location

Loc Qty

Loc Code

FP006

43

71371 ✓

43

1

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Shop Packet Print

Page 3

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Start Date: 9/20/2011

Required Date: 10/4/2011

Start Qty: 1.00

Required Qty: 1.00

D3508-3 Manufactured No

250

Each

8.0000

1

1



Wearplate



BR 12-1-5

Location

Loc Qty

Loc Code

FP021

1

38527

1

FP21

7

72169 ✓

7

1

D3508-9 Manufactured No

250

Each

10.0000

1

1



Wearplate



BR 12-1-5

Location

Loc Qty

Loc Code

FP21

10

72203 ✓

10

1

D3558-3 Manufactured No

250

Each

6.0000

1

1



Gasket



BR 12-1-5

Location

Loc Qty

Loc Code

FP014

6

75179

71651

1

72170

5

1

D3558-9 Manufactured No

250

Each

8.0000

1

1



Gasket



BR 12-1-5

Location

Loc Qty

Loc Code

FP014

8

71212 ✓

8

1

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Start Date: 9/20/2011

Required Date: 10/4/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No 250 Each 2,700.000 28 28
BOLT

Location	Loc Qty	Loc Code
ST350 119828.	2700	28.
117313	2	
117688	5	
117872	22	
118112	16	
118451	969	
118628	186	
118706	500	
118838	1000	

AN3C5A Purchased No 250 Each 1,062.000 2 2
Bolt

Location	Loc Qty	Loc Code
FP-A 119749.	7	2.
115835	7	
ST350	1055	
116419	28	
117343	356	
117764	169	
117872	2	
118451	500	

AN960JD416L * NAS1149D0416J ✓ Purchased No 250 Each 15.0000 2 2
Washer

Location	Loc Qty	Loc Code
FP-B 118131.	15	2
110153	15	

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Required Date: 10/4/2011

Start Qty: 1.00

Required Qty: 1.00

AN960C10L  NAS1149C0332 ✓ Purchased

No

250

Each

0.0000

28

28



119736.



28.

BR 12-1-5.

washer

AN4-4A Purchased

No

250

Each

48.0000

2

2



BR 12-1-5.

Bolt

Location

Loc Qty

Loc Code

FP-B

20

114615 ✓

20

2.

ST356

28

114615

28

NAS1611-012 Purchased

No

250

Each

78.0000

6

6



BR 12-1-5.

O-RING

Location

Loc Qty

Loc Code

FP

68

118384 ✓

68

6.

FP-A

10

113845

10

NAS1611-015 Purchased

No

250

Each

127.0000

2

2



BR 12-1-5.

O-RING

Location

Loc Qty

Loc Code

FP-A

127

115101

85

116081 ✓

42

2

Tuesday, September 20, 2011 10:18:17 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, September 20, 2011 10:18:17 AM

Page 8

Work Order ID: 73959



Parent Item: D117-762-041



Parent Item Name: Replacement Skidtube

Start Date: 9/20/2011

Required Date: 10/4/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-016

Purchased

No

250

Each

80.0000

2

2



BK 12-1-5

O-RING

Location

Loc Qty

Loc Code

FP-A

~~107173~~

80

112492

54

113524

26

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

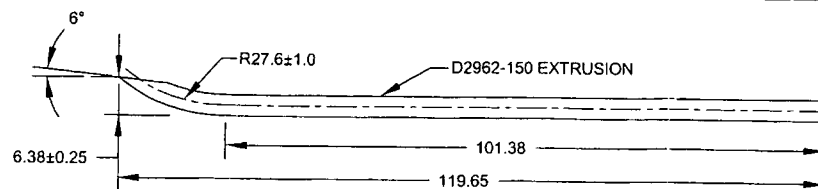
NOTE: Date & initial all entries

PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

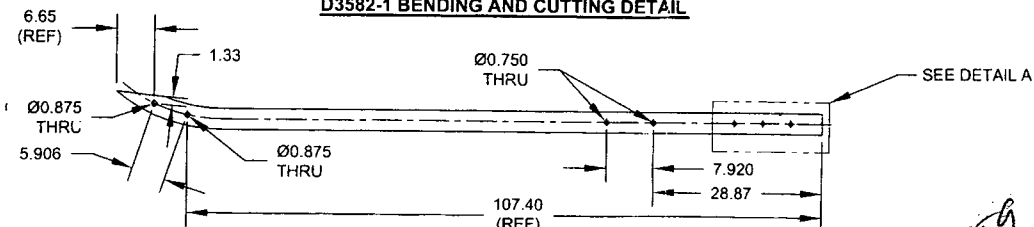
Qty	Part Number	Description
X	D3582-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2971	CROSS BOLT SPACER
2	D2973	CROSS BOLT SPACER
2	D3492-049	PLUG ASSEMBLY
2	D3492-051	PLUG ASSEMBLY
6	D3492-053	PLUG ASSEMBLY
1	D3508-3	WEARPLATE
1	D3508-9	WEARPLATE
1	D3508-11	WEARPLATE
1	D3508-13	WEARPLATE
1	D3558-3	GASKET
1	D3558-9	GASKET
1	D3558-11	GASKET
1	D3558-13	GASKET
1	D3584-1	WEB
3	D3662-1	CROSS BOLT SPACER
1	D3662-3	CROSS BOLT SPACER
36	AELS-1032-130	INSERT
2	ALS7-428-165	INSERT
28	AN3C4A	BOLT
2	AN3-5A	BOLT
2	AN4-4A	BOLT
28	AN960C10L	WASHER
2	AN960JD10L	WASHER
2	AN960JD416L	WASHER

GENERAL NOTES:

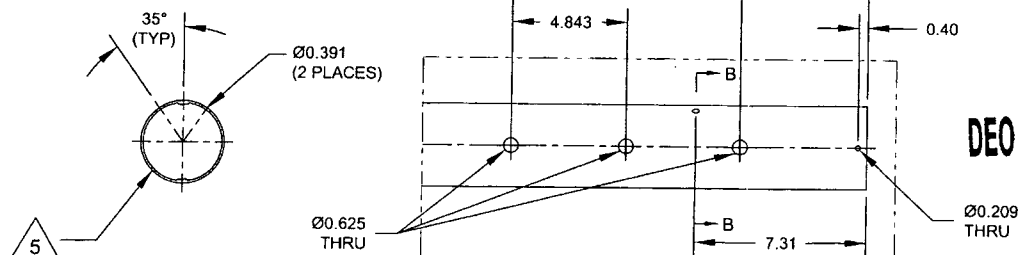
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- WELDING TO BE DONE PER DART QSI 004
- INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL $\varnothing 0.297$ HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB
 - POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
 - ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4



D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 1:5

DETAIL A
SCALE 1:5

DEO ATTACHED

RELEASED
07.11.2010

A	NEW ISSUE	PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PAH		
DRAWN	PAH		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	07.06.08		

DART AEROSPACE USA, INC
PORT HADLOCK, WA

DRAWING NO. D3582
REV. A
SHEET 1 OF 2

TITLE BK 117 SKIDTUBE ASSEMBLY
SCALE 1:20

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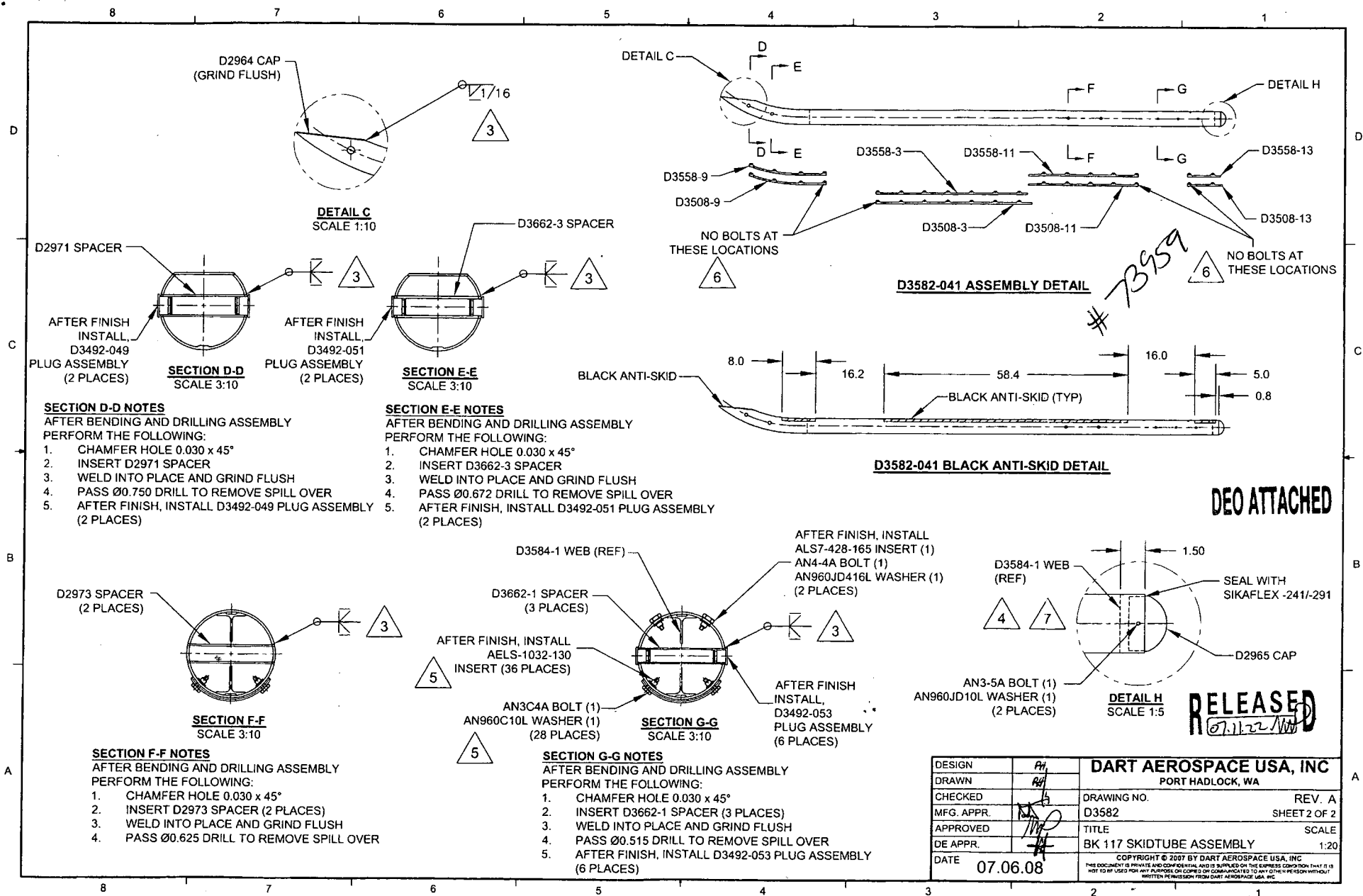
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all-entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

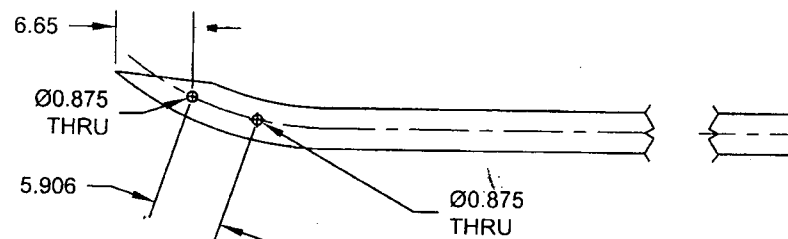
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

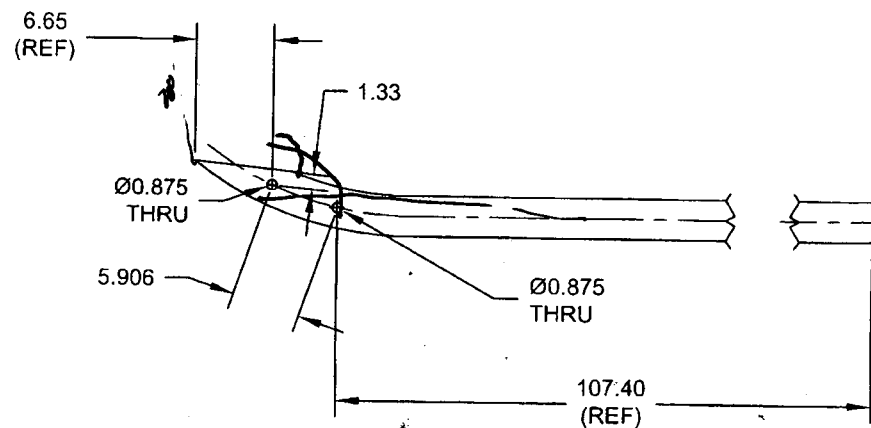
DRAWING NO. D3582	TITLE BK 117 SKIDTUBE ASSEMBLY	REV. A	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3582-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>PH</i>	CHECKED <i>B</i>	MFG. APPR. <i>B</i>	APPROVED <i>MD</i>		DE APPR. <i>MD</i>		
DATE 09.04.06	DATE 04.04.06	DATE 09.04.06	DATE 12/24/06		DATE 09.04.06		

FOR EASE OF MANUFACTURE AND TO ENSURE THE FIT OF BRISTOL WIRESTRIKE SKID GEAR DEFLECTOR:
UPDATE DIMENSIONING OF 2 FWD HOLES ON SHEET 1 AS SHOWN

IS:



WAS:



RELEASED
09/04/22 *MD*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 263

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: B72595
Part number: D117 762 041
Description: 117
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat Lewis Date of Test Coupon 11-08-17
Welder Barclay Elliott Date of Test Coupon 11-08-17

The above named individual is qualified in accordance with AWS D17.1.2001 to weld